IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF TEXAS AUSTIN DIVISION

CARBYNE BIOMETRICS, LLC,

Plaintiff, Civil Action No. 1:23-cv-00324

v.

APPLE INC., JURY TRIAL

Defendant.

CARBYNE BIOMETRICS, LLC'S RESPONSE TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT OF NONINFRINGEMENT OF U.S. PATENT NOS. 9,972,010; 10,713,656; AND 11,526,886

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Term	Definition	
Apple	Defendant Apple Inc.	
Carbyne	Plaintiff Carbyne Biometrics, LLC	
'010 Patent	U.S. Patent No. 9,972,010	
'656 Patent	U.S. Patent No. 10,713,656	
'886 Patent	U.S. Patent No. 11,526,886	
Fraud Reduction Patents or Asserted Patents	The '010, '656, and '886 Patents	
Fraud Reduction Claims or Asserted Claims	Claims 1, 6, and 9 of the '010 Patent;	
	claims 1 and 8 of the '656 Patent, and	
	claims 1, 12 and 14 of the '886 Patent	
Motion or Mot.	Apple's Motion for Summary Judgment that	
	the Asserted Claims of U.S. Patent Nos.	
	9,972,010; 10,713,656; and 11,526,886 are	
	Invalid Under 35 U.S.C. § 112	

I. INTRODUCTION

Apple's motion for summary judgment should be denied because there are genuine issues of material fact as to whether the Apple Accused Products determine whether a user is alive. As Apple's own expert, Dr. Dunstone, has testified, there are two aspects of liveness detection: the detection of the state of being alive and the detection of a fake (or artifact). The accused iPhones and iPads (implementing Face ID) and Vision Pro (implementing Optic ID) perform both forms of liveness detection. They detect whether the user is a "fake" by capturing images of the user and running anti-spoofing algorithms to determine whether the object being photographed is a real person as opposed to a still photograph or other spoof attempt. The Accused Products also detect a user's state of being alive by checking for attention awareness, which requires a user to open their eyes and direct them to the device screen or a focal point. Apple's arguments that Accused Products do not perform the claimed aliveness determination should be rejected because, among other things, they improperly read into the claims a requirement that the aliveness determination must be some advertent determination that the user is alive rather than dead. This is contradicted by Apple's own expert, the prior art he relies upon, the Fraud Reduction Patents' common specification, and Carbyne's expert. This conflicting evidence creates a genuine issue of material fact, and Apple's motion for summary judgment of noninfringement should therefore be denied.

Likewise, for the '656 Patent, Apple's argument that Dr. Cole has not identified "a processor" configured to perform the claimed functions should be rejected. Dr. Cole identified the system on a chip (SoC), which is "a processor" that includes all the components that perform the claimed functions. Thus, at a minimum, this presents a factual dispute here that precludes summary judgment.

II. LEGAL STANDARD

Summary judgment is only proper "if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). All evidence must be viewed in the light most favorable to the non-movant, Carbyne, and all reasonable inferences must be drawn in its favor. *Matsushita Elec. Indus Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986). A dispute about a material fact is "genuine" when the evidence is "such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). In deciding a motion for summary judgment, the Court does not weigh the evidence; instead, it must determine only whether a genuine issue of material fact exists. *Id.* at 248–49.

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III. FACTUAL BACKGROUND

The claims of the Fraud Reduction Patents are directed to improved systems and methods for reducing fraud in electronic transactions. Dkt. 190-1 ('010 Patent) at abstract, 1:19-29. The claims recite a customized user interface in conjunction with a fraud detection analysis that consists of capturing user's biometric information and performing a fraud detection analysis to determine whether the user is alive. *See id.* at claim 1 of the '010, '656, and '886 Patents.

Apple directly infringes the Asserted Fraud Reduction Claims through the use, sale, and importation of certain iPhones and iPads equipped with Face ID ("iOS Accused Products") and Vision Pro equipped with Optic ID ("Vision Pro Accused Product") that are configured to perform Apple Cash peer-to-peer (P2P) transfer. *See* Dkt. 188-3, ¶¶ 24, 98-102. In completing a P2P transfer, the Accused Products capture a user's biometric information and perform the claimed

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¹ The Fraud Reduction Patents share a common specification. For convenience, citations to the specification will be to the '010 Patent (Dkt. 190-1).

fraud detection analysis that comprises determining, based at least in part on the captured biometric information, that the user is alive. *See, e.g.*, Dkt. 188-8 at 25-53.²

The iPhone and iPad perform the aliveness determination when authenticating with Face ID. *Id.* at 42-48. When transferring funds to another user with Apple Cash, the sender is prompted to complete Face ID authentication to complete the transfer. *Id.*The result of this process is a determination that the user is a living human being and not a 2D photograph or other spoof. *Id.* at 43.

The process for Optic ID authentication in an Apple Cash P2P transfer is much the same. *See id.* at 48-51.

IV. ARGUMENT

A. There is a Genuine Issue of Material Fact Regarding Whether the Accused Products Determine That a User Is Alive.

As explained above, the Accused Products perform an aliveness determination as part of the claimed fraud detection analysis, or at least the evidence discussed below creates a fact issue

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² For convenience citations for the accused functionality are only to the App'x C ('010 Patent) of the Opening Infringement Report of Dr. Cole.

that precludes summary judgment. Apple contends that the Accused Products do not infringe the Asserted Claims because they require "an actual determination be made of the referenced subject matter [aliveness], rather than merely making a determination of something else that may correlate in some way with the reference subject matter." Mot. 3. However, this argument fails for several reasons.

See Dkt. 188-8 at 32, 42-51. This defeats Apple's motion.

Carbyne's expert Dr. Cole is also of the opinion that anti-spoofing is an "aliveness determination" that ensures the user is a real person and not a photograph or other spoof is a way of determining a user is alive. See Dkt. 188-8 at 43; Dkt. 188-1 at 164:18-167:13.3 This

 3 Q: Okay. So when you say "that's an example," are there other examples? What I'm trying to drill down on, what, specifically, are you relying upon to show that the accused products determine that the user is alive?

A: So we have, but I think I read that paragraph on my opening report, paragraph 119, for example. . . . So if we jump to Appendix C. Bottom of 43. The last paragraph, . . . the device and further

understanding that an anti-spoofing test is a "liveness" determination is supported by the Fraud Reduction Patents' common specification: "Techniques for confirming that the object being photographed is alive (e.g., by taking multiple photographs in rapid succession) can be employed to help make sure that the fraudster isn't using camera 112 to photograph a printed picture of the legitimate user." Ex. 1 at 8:55-8:60. Apple relies on this very liveness determination for one of its prior art references: "the term liveness being used herein for any step or steps taken to determine whether the biometric data is being acquired from a live human rather than a fake due to a spoof attempt." Ex. 3 (Hoyos Reference) at [0012].

Elsewhere in his report, Apple's expert, Dr. Dunstone, tries to cabin the claimed "aliveness" determination to requiring an "actual, advertent determination of whether a user is alive." Ex. 1 at ¶ 939. Dr. Dunstone further states that the Asserted Claims "would not be satisfied by a system or method that merely happens to work on a living user and happens to not work on someone who is deceased—the claims require that there be a specific determination of whether a user is alive (or not—which means dead)." Id. First off, it is hard to imagine a clearer bright-line test for determining aliveness than one where a living person would pass, and a dead person would fail. Putting that aside, Dr. Dunstone's insistence that a liveness determination requires some advertent determination reads requirements into the claimed fraud detection analysis that are not there and are out of step with his own opinions, the prior art he relies on, the Fraud Patents' specification, and Dr. Cole's opinions.

So that would be another example.

Dkt. 188-1 at 164:18-165:25.

But even if the claims did require some "advertent" determination (which they do not), the Accused Products would still infringe. As Dr. Cole points out, and Dr. Dunstone agrees, Face ID and Optic ID authentication both require an attention awareness component. *See, e.g.*, Dkt. 188-8 at 32, 43; Dkt. 188-2, ¶ 69. For Face ID, this requires that the user's eyes be open and directed to the device. *Id.* For Optic ID,

Dkt. 188-8 at 48-51; Dkt.

188-2, ¶ 78. Directing one's attention or gaze at a point is an affirmative step that allows the system to determine the user is alive. *See* Dkt. 188-8 at 48-51.

Apple contends that the Accused Products' requirement that the user's eyes be open and directed to a screen (Face ID) or does not actually determine whether a user is alive because it does not detect the opening or closing of the eye or eye movement. Mot. 4-8. But Apple closes its eyes to its own source code.

Further, Apple contends that whether a pair of eyes are open and pointing to a screen (Face ID) or (Optic ID) is not a determination that a user is alive because, for example, a cadaver may have its eyes open and another person could direct the eyes to the device screen and so forth to complete the authentication. *Id.* at 6-8.

However, Apple's theory has a several holes. As Dr. Cole has opined, one of skill in the art would understand the requirement that a person open their eyes and direct them to a specific point is a litmus test to determine whether a user is alive. *See* Dkt. 188-8 at 32, 43-51; Dkt. 188-3, ¶ 119. Further, Apple does not account for a person blinking when the Accused Products are running the attention awareness algorithms.

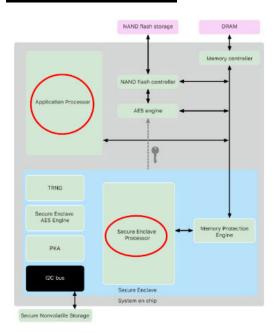
Finally, Apple's theory that a cadaver could pass Face ID or Optic ID authentication is just that a theory. Admittedly, Apple has never tested Face ID or Optic ID using a cadaver. See Ex. 4 (Sengelaub Dep. Tr.) at 201:16-202:23 and Ex. 5 (Wells Dep. Tr.) at 122:9-123:11. Apple therefore cannot say with any certainty that a cadaver, even if manipulated by another person, would pass the attention check or even the anti-spoofing check as the shape of the face may change upon death. Further, since Apple's Face ID and Optic ID algorithms are trained only with data from the faces and eyes of living people, it is more likely that a cadaver would not pass Face ID or Optic ID authentication. *Id*.

In sum, the Accused Products perform an aliveness determination either by detecting a non-living spoof attempt or based on actions taken by a live person. At a minimum the conflicting expert testimony on this point creates a genuine issue of material fact that precludes granting summary judgment for Apple. See Crown Packaging Tech., Inc. v. Ball Metal Beverage Container Corp., 635 F.3d 1373 (Fed. Cir. 2011) (finding summary judgment inappropriate where parties' experts offered conflicting opinions); B-K Lighting, Inc. v. Fresno Valves & Castings, Inc., 375 F. App'x 28 (Fed. Cir. 2010) (finding conflicting expert testimony created a genuine issue of material fact).

Carbyne Has Provided Evidence That the Accused Products Include "a В. Processor" That Practices the Limitations Necessary to Infringe the '656 Patent.

Independent claim 1 of the '656 Patent requires "a processor" configured to perform the claimed functions. See Dkt. 190-2 at cl.1. Apple argues that Carbyne has not identified a single processor that is configured to perform all the claimed functions as the law requires. Mot. 8. Apple is demonstrably wrong. The Fraud Reduction Patents' common specification states: "As used herein, the term 'processor' refers to one or more devices, circuits, and/or processing cores configured to process data, such as computer program instructions." Ex. 1 at 2:10-2:12; KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000) (noting Federal Circuit "has repeatedly emphasized that an indefinite article 'a' or 'an' in patent parlance carries the meaning 'one or more' in open-ended claims containing the transitional phrase 'comprising.' "). Therefore, "a processor" can be a single processor, or it can encompass one or more processors as subcomponents that perform the claimed functions—as long as that processor or processors perform each of the claimed limitations.

Regardless of whether "a processor" is a single processor or multiple processors, Dr. Cole has identified "a processor" in the Accused Products that performs each of the claimed functions. All of the Accused Products are equipped with Apple's system on a chip (SoC). See Dkt. 188-10 at 2-3. The SoC itself is a processor that contains several processing subcomponents and is "a processor" according to the definition provided in the specification. All the processing components that perform the claimed functions, such as the application processor, secure enclave processor, image signal processor, and are housed on the SoC.



Dkt. 188-8 at 2-4.

Dr. Cole identified the SoC as "a processor" in the infringement charts of his expert report and during his deposition. *See* Dkt. 188-10 at 2-3; Ex. 5 (Cole Dep. Tr. Vol. 2) at 445:18-450:19. So even if a single processor were required to perform all the claim limitations, Dr. Cole has identified a single processor (the SoC) configured to perform the claimed functions. Therefore, Apple's motion for summary judgment of noninfringement of the '656 Patent should be denied.

V. CONCLUSION

For the foregoing reasons, Apple's motion for summary judgment should be denied.

Dated: November 13, 2024 McKOOL SMITH, P.C.

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has been served on all counsel of record via the Court's ECF system and via electronic email on November 13, 2024.

/s/ Joshua W. Budwin Joshua W. Budwin